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ABSTRACT

A single-subject study was conducted with a language-delayed male Native American child (age 3 years, 5 months), who exhibited minimal ability to communicate verbally and relied on gesture as a primary means of communicating. In order to identify and code the child's specific communicative intentions, the Coggins and Carpenter (1981) Communication Intention Inventory was used for pretest and posttest assessments. The communicative intentions of "request for action" and "protest" were considered to be developmentally appropriate areas for intervention. Consequently, a two-track intervention strategy was developed. The intervention consisted of nine 10-minute therapy sessions conducted over a period of 2 1/2 weeks. The intervention strategy involved the presentation of an object/activity requiring the solicitation of services from the listener-therapist, who was required to act on the object/activity in a manner the subject did not want or expect. Following intervention, the frequency of the subject's responses in the gestural mode decreased significantly, while verbalizations significantly increased in each of the areas of communicative intentions that were specifically taught. Similar changes in frequency and mode of production also occurred in six other areas of communicative intentions that were not specifically taught. (RH)

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HEF - 580

Project

Application of Piagetian Theory in Clinical and Research Settings.

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Background: In fullfillment of the requirements for HEF - 580, Applications of Piagetian Theory in Clinical and Research Settings, a study was conducted on a male, preschool age child. My initial selection for the project requirements was to develop a case study project and subsequent intervention strategies for a language delayed child in order to test the hypothesis that play and drawing behaviors can be used to develop language. The Play, Language, and Drawing Scale, developed by Dr. Susan Workman and Dr. Nathaniel Owings at Montana State University, was to be used as the vehicle for assessment and subsequent intervention. Videotapes were used in class and in individual sessions in order to establish reliability.

A three year, five month old male, Native American child was examined in this initial study. The child was initially selected for study based on parental report. The subject's mother had approached me in the past requesting some information on bilingual children. At this time, she expressed concern about her son's inability to communicate well and reported that his meager efforts at communicating were oftened ridiculed or left unnoticed. The mother stated that "he's hard to understand", " he doesn't talk very much" and, "when I take him back home, people make fun of him".

Further questioning revealed that during the child's three and one half years, he has been exposed to a variety of linguistic environments, including: English, Crow, Sioux, and Chinese. At the time of this investigation, mother reported that the child spoke English and understood some of the Crow language. Parent perceptions indicated that the child was developing "normally" until approximately two years of age. Concern about the child's language began at this

time and continues to be present. The mother made a particular reference to the fact that between the ages of two and three, the subject was cared for by a monolingual Chinese-speaking babysitter while the mother was in school. The range of time spent in the babysitter's home was approximately three to six hours per day, five days per week.

A few weeks after my initial conversation with the mother, I approached her about the possibility of conducting my project research with her son. She "appeared" somewhat skeptical but gave me permission to proceed.

At the time of my initial investigation, the Subject was living at home (student housing near a university) and was being cared for by a babysitter for approximately five to seven hours per day in an English speaking environment. The number of children in the babysitter's home ranged from four to thirteen children between the ages of three months to five years. It was in this setting that initial and subsequent assessment and intervention sessions were conducted.

Following some preliminary informal observations, a pre-assessment was conducted with the Subject using the Play, Language, and Drawing Scale. Pre-assessment results generally revealed overall delays in all three areas examined, tentatively "placing" the child developmentally at approximately twenty-four months. At this time, I attempted to obtain a language sample from the child with negligible results. Data obtained from the initial observations, the pre-assessment on the Play Language and Drawing Scale, and a subsequent attempt

to obtain a language sample revealed that: 1) verbal communication was minimal. The few examples that I managed to observe were primarily one word utterances and usually referred to objects in the immediate environment. Other attempts at communicating verbally were unintelligble; 2) However, the child demonstrated efforts to communicate, primarily through the use of gestures and/or vocalizations.

Based on the information that I had obtained on this child and under the guidance of Dr. Workman and Dr. Owings, I decided to explore an intervention strategy that would examine the areas of communicative intentions. Since the child was demonstrating the ability to use some communicative intentions, it was not the purpose of the study to specifically teach communicative intentions. Rather, my focus for this study was to utilize the Subject's existing communicative intentional behaviors as a foundation to develop the ability to encode those intentions verbally. Specifically, the purpose of this study was to: 1) to communicate with the child. Too often, we, as educational practitioners, forget that communication involves more than one person. 2) to improve the child's ability to communicate verbally. 3) to develop an intevention strategy for eliciting and training verbal protest and request for action. and, 4) to conduct an intervention strategy with a "language delayed" child who demonstrated the ability to use some communicative intentions in a gestural mode but exhibited a minimal ability to express them verbally.

INTERVENTION STRATEGY

Subject: A Single Subject Study was conducted with a three year, five month old male, Native American child. At the time of this investigation, the Subject was living at home (student housing) with his mother and younger, nine month old brother. The father was at home on his ranch and made sporadic visits to the family. Child care arrangement were essentially the same. During the course of this investigation , the child received no other special services or other means of intervention. However, the mother did report that she had attempted in the past to place her child in a local DayCare or Preschool program. She stated that she withdrew her son after a few days because "he didn't want to go" and "he cried". However, this occurred prior to my involvement with the Subject.

As mentioned, the Subject was selected for this study, primarily due to: 1) parental concern, 2) a minimal ability to communicate in a verbal mode, and 3) his continued reliance on a gestural mode as a primary means of communicating.

Pre and Post Test for Communicative Intentions. The Coggins and Carpenter (1981) Communication Intention Inventory was used for pre and post test assessments in order to reliably identify and code specific communicative intentions. (See Table One) The eight communicative intentions under investigation in this study are operationally defined in Table Two. Pre and Post test assessments were con-

ducted over a one half hour period, in an unstructured setting, in the babysitter's home.

Selection of Intentions for Intervention: Pre-assessment results were used as a basis for determining which of the communicative intentions were to be selected for the intervention. Pre-assessment results generally indicated that gesture was the predominant mode of communicating. A total of twelve gestures/ gestural-vocalizations were recorded over a one half hour period, within a range of zero to three responses in each of the eight intentional catergories. Only five verbalizations were coded across the areas of: comment on object (3), request for information (1), and protest (1). Although a significant difference in the number of responses was evident between the modes of communication examined, this difference was not observed among the eight communicative intentions under examination in the Coggins and Carpenter Inventory.

In order to narrow the focus of the intervention, observational data, research, and consultation with Dr. Workman and Dr. Owings were instrumental in identifying two specific areas for the development of the intervention strategy.

Observational data revealed that the Subject consistently requested action from a listener through a gestural mode. If these requests for action were not met, the child would protest, gesturally, or "give up". By this, I mean, that the Subject would not persist with gestures nor pursue any alternate means of having his requests

met. However, during the pre-assessment period, only one gestural request for action was coded. Also, I must add, that during the Pre-assessment period many opportunities for protest were provided in this particular environment. However, in proportion to the number of protest opportunities, only three gestures and one verbalization were evident.

It has been noted that the Subject verbally commented on an object three times over a one half hour period with an additional gestural comment on an object. This was the highest score obtained on the pre-test. Verbal comments on objects were three, one word utterances. Research in this area (Chapman, 1981) and consultation with Dr. Workman and Dr. Owings suggested that request for action and protest were developmentally appropriate areas for intervention since they occur at approximately the same time. Chapman (1981) has identified the developmental appearance of these communicative intentions by Stage V & VI of the Sensori-motor Period.

Pre-assessment results indicated that the Subject demonstrated the ability to use communicative intentions of protest and request for action in a gestural mode, however, to a minimal degree. Since, the Subject had already demonstrated the ability to use these two intentions in some fashion, protest and request for action were selected as the basis for the intervention strategy. Research in the area of communicative intentions supports the notion that these intentional behaviors are evident during the sensori-motor period and eventually become encoded into a liguistic code. (Bruner, 1975, Garvey, 1975, Bates, Camaioni, Volterre, 1975) Therefore, the intent

of the intervention strategy was not to teach the communicative intentions of protest and request for action, but, rather to use these demonstrated intentions as a basis for eliciting and "training" verbal protest and verbal request for action.

Intervention Model: Decision Rules . Modeled on the pilot study conducted by Dr. Workman, Dr. Owings, et. al. (1984), a two track intervention strategy was developed in order to elicit and train verbal protest and request for action. (See Table 3 and Table 4 for Track One and Two Rules). The intervention strategy is based on the presentation of an object/activity which requires the solicitation of services from the listener. In order to elicit protest and train a verbal request for action, the listener is required to act on the object/activity in a manner that the Subject does not want or expect in that situation. It was the intent of this strategy to develop verbal protest and verbal request for action by training each of of these areas by using "protest" as a means for training and eliciting request for action.

Procedure:The intervention consisted of nine, ten minute therapy sessions over a two and one half week period. Two interruptions hampered the planned, consecutive sequence of the therapy sessions. The therapy sessions were conducted by the investigator only, utilizing the Track One and Two Decision Rules of the Intervention model. Three randomly selected therapy sessions were used as probe data. A one half hour post assessment procedure using the Communi -

cation Inventory was conducted following the intervention in the same unstructured setting as the Pre-test assessment procedures.

At this point, I must call particular attention to the context in which the intervention sessions were conducted. Due to the high noise and activity level of the babysitter's household. a separate room (bedroom) was isolated for use during the therapy sessions. As indicated, Track One and Trach Two Decision Rules were employed by the investigator with the subject. However, these decision rules were utilized and incorporated into a context of play and "naturally occurring" language and communication contexts. For example, when the investigator had to "model" or "program" a request for action, the investigator responded simultaneously with an appropriate verbalization and motoric action. The goal of this strategy was to communicate with the child in an attempt to help the child to develop and improve his ability to communicate verbally within a verbal environment. This strategy was designed to employ his demonstrated communicative intentional behaviors as a means of eliciting and training a verbal protest and verbal request for action.

Results: Data regarding the Subject's use of verbal protest and verbal request for action was derived from three sources: pre-assessment data, post-assessment data, and data obtained during the probe therapy sessions. The pre-assessment frequency and mode of production data in Table 5 show that prior to the intervention, the Subject used only one gestural request for action and no verbal request for action; three gestural protests and one verbal protest. The total frequency in each of these areas consecutively was one request for action and four protests.

Following the intervention therapy sessions, post-assessment frequency and mode of production data disclosed no gestural requests for action and eleven verbal requests for action; no gestural protests and four verbal protests. The total frequency in each of these areas consecutively was eleven verbal requests for action and four verbal protests. In addition, the pre and post assessment data revealed a marked decrease in the number of gestures, totaling zero across the eight communicative intents examined, and a marked increase in the number of verbalizations, totaling 101 across the eight communicative intentions examined in this study. It is interesting to note that the area of Comment on Objects, twenty seven verbal responses were coded. Again, this was the highest "score" obtained on the post test. Similiar results were evident on the pre-assessment data.

Probe therapy data (Table 6) obtained in three randomly selected sessions revealed: 1) a decrease in the number of gestures/ gestural-vocalizations (4 → 0); 2) an increase in the number of verbalizations (1 → 18); and 3) as request for action increased, protest decreased.

Discussion: The pre and post assessment frequency and mode of production data revealed significant changes in both frequency of occurance and mode of production. Results of the pre-assessment data indicated that gestures/gestural-vocalizations was utilized as a primary means of communicating by the Subject. Following the intervention, post-assessment data revealed that the frequency of the Subjects responses in the gestural mode decreased significantly, while verbalizations significantly increased in each of the areas

of communicative intentions that were specifically taught. This suggests that the child was able to encode his gestural communicative intentions for protest and request for action into a verbal mode. In addition, further investigation of the remaining six areas of communicative intentions, which were not specifically taught, but were examined in the course of this study, revealed similiar results. Similiar changes occurred in both frequency and mode of production. There was an increase in the usage of intentions and changes in the modalities (gestural to verbal mode) of the intentions not directly taught. As the Subject was able to encode and utilize a verbal mode of production, the gestural mode decreased. Post-assessment frequency and production data showed a total of zero gestures/ gestural vocalizations, and one hundred and one verbalizations. These verbalizations ranged in form from one word utterances to sentence production. It should be noted that although the post-assessment data revealed no gestures by the Subject, it would be faulty to conclude that the Subject did not gesture, rather, the coded verbalizations took precedence over any gestures that may have been present. In the same vein, one must not jump to the conclusion that the subject no longer gestures or should not longer gesture in his efforts to communicate. It may well be that the Subject learned a more effective and efficient means of having his needs met. Several researchers (lost citation) have echoed the notion that as the child begins to encode communicative intentions into a verbal mode, the chances of having his needs met on a first trial basis is higher because the number of ambiguous options available in response to the child's request decreases.

possibly to Done

Results from the Probe therapy session data, also support the preliminary findings of the frequency and mode of production data yielded by the pre and post assessment results. In addition, the probe therapy data provided more specific information about the two areas directly taught; protest and request for action. In Table 6, if we examine the subjects gestural responses, the initial probe therapy data (Session 2) shows a total of four gestural responses: fifty percent of the Subject's responses were protest and fifty percent were requests for action. During the second Probe therapy session (Session 4), a total of one gesture is recorded. Protest was not evident in the gestural mode but appeared for the first time in the verbal mode for a total of five verbal protests. By the last Probe therapy session (Session 7), both gestural protest and gestural request for action totaled zero. However, the verbal mode reveal an increase for both intents and, furthermore, demonstrated a continued increase in the verbal request for action, while the verbal protests decreased. It may well be, as Owings and Workman (1984) suggest that the Subject "learned that protest alone was not adequate to effect change in his environment". In order to get his needs met, the Subject had to verbally request an action. The data revealed in this present study tends to support the Workman and Owings proposition that that the protest intention can be used as a "vehicle" for teaching the request intentions. In a similiar fashion, the present study was designed to use gestural protest as a vehicle for eliciting and teaching both verbal protest and verbal request for action.

The tentative results of this study suggest that the intervention strategy was successful. The Subject did learn to use verbal protest and verbal request for action. He learned to effect his environment through the use of words in order to get his needs met, whereas, earlier, he used communicative intentions of protest and request for action in a gestural mode with random success. In addition, verbalizations in the other six communicative intentions examined in this study increased or appeared for the first time.

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TRACK 1

TABLE 3

INTERVENTION STRATEGY

Decision Rules for Eliciting and Training

(Verbal) Protest and Request for Action (designed to elicit a request for action from the listener)

PROCEDURE: Act on the object or activity in a manner that the child does not want or expect in that particular situation.

SEQUENCE: A) The Listener will act on the object or activity in a manner that the child does not want or expect in that particular situation.
B) Wait 10 seconds.

1		2
If protest is elicited: Ask: What do you want me to do? If child verbally requests action: Listener answers and responds appropriately.	If no response: Model a request for action and respond appropriately.	If no response: Repeat Step A in a more obvious or exaggerated If protest is elicited, Repeat #1. If no protest, change object/activity after 3 trials.

TRACK 1

3

If no protest, the child verbally requests action:

Listener answers and responds appropriately.

Table 4

INTERVENTION STRATEGY

Decision Rules for
Eliciting and Training
Protest and Request for Action

PRODEDURE: Provide child with an object/activity that the child desires, which requires the solicitation of services from the listener.

SEQUENCE: A) Give the child the desired object/activity.
B) Wait for the child's reaction. Wait time will vary depending on the object or sequence of the activity.

1	2		
If child verbally requests action:	If, no response:		
	Ask: What do you want me to do?		
Listener answers and responds appropriately			
	If response is verbal:	If no response:	If response is gestural or gestural vocal:
	Repeat #1	Model a request for action and respond appropriately.	Repeat # 3
		Repeat Step A.	

3

If response is gestural or gestural vocal:
Ask: What do you want me to do?

If the response is the same (gestural/gestural vocal)

Employ Track One Rules.

Table 5

FREQUENCY OF OCCURANCE AND MODE OF PRODUCTION
FOR EACH OF THE EIGHT COMMUNICATIVE INTENTS
DURING THE PRE AND POST ASSESSMENT

COMMUNICATIVE INTENTS (CI)	PREASSESSMENT			POST ASSESSMENT		
	GGV-	V	TOTAL	GGV	V	TOTAL
COMMENT ON ACTION	2	0	2	0	14	14
COMMENT ON OBJECT	1	3	4	0	27	27
REQUEST FOR INFORMATION	0	1	1	0	13	13
ANSWERING	3	0	3	0	9	9
REQUEST FOR ACTION	1	0	1	0	11	11
REQUEST FOR OBJECT	2	0	2	0	12	12
ACKNOWLEDGING	0	0	0	0	11	11
PROTESTING	3	1	4	0	4	4
OVERALL TOTALS FOR GGV, V, AND COMM. INTENTS	12	5	17	0	101	101

1. GGV REFERS TO GESTURAL OR GESTURAL VOCAL
2. V REFERS TO VERBALIZATION

Table 6

VOCALIZATIONS AND VERBALIZATIONS
DURING PRE-TEST, POST-TEST AND PROBE
THERAPY SESSIONS

	VOCALIZATIONS	VERBALIZATIONS	TOTAL
PRE-TEST 30 Minutes	12	5	17
PROBE THERAPY SESSIONS 10 Minutes			
SESSION 2	4	1	5
SESSION 4	1	12	13
SESSION 7	0	18	18
POST-TEST 30 Minutes	0	101	101